مجلس أبوظبي للجودة والمطابقة
ABU DHABI QUALITY & CONFORMITY COUNCIL

إشتراطات أبوظبي المهنية
Abu Dhabi Occupational Terms

ADOT
Abu Dhabi Occupational Terms

ADOT 59/2017

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First Edition

الاصدار الأول

Abu Dhabi Occupational Terms for Electrician – Level 3

إشتراطات أبوظبي المهنية لكهربائي- المستوى 3

Contents

Amendment Page

This Amendment Page is updated and issued with each set of revised and/or new pages of the document to help ensure that each copy of this Abu Dhabi Occupation Term (ADOT) contains a complete record of amendments.

This Occupational Term is a live document which can be amended when necessary. QCC can review stakeholder comments in order to review and amend this document; ultimately resulting in an issuance of an updated version, if necessary.

Log of Amendments						
Amendment			**Discard**		**Insert**	
No.	**Date**	***Sections Changed**	**Page(s)**	**Issue No.**	**Page(s)**	**Issue No.**

About the Abu Dhabi Quality & Conformity Council

The Abu Dhabi Quality and Conformity Council (QCC) was established by law No. 3 of 2009, issued by His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE. QCC is responsible for the development of Abu Dhabi Emirate's Quality Infrastructure, which enables industry and regulators to ensure that products, systems and personnel can be tested and certified to UAE and International Standards.

Products and services certified by QCC receive the Abu Dhabi Trustmark. The Trustmark is designed to communicate that a product or system conforms to various safety and performance standards that are set by Abu Dhabi regulators.

Foreword

The QCC, along with relative stakeholders, had developed occupational terms for 21 unique occupations in the construction sector. This was required because of a high dependence on migrant labor to fill key technical roles in the skilled trades and concerns about the productivity of the industry where skills investment is inconsistent.

The occupational terms are professional standards that personnel must meet in order to perform the jobs they are assigned to produce quality outcomes. In addition, it is required that any person working on the design, construction, installation, operation or maintenance of Electrical Installations in the Emirate of Abu Dhabi must work in accordance with the requirements of the Electricity Wiring Regulation and others any related regulations issued by the Department of Energy .

The Government of Abu Dhabi, under the leadership of His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE and Ruler of Abu Dhabi, and His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi, Deputy Supreme Commander of the UAE Armed Forces and Chairman of the Abu Dhabi Executive Council, has invested heavily, and at high levels of professionalism and safety, in the Infrastructure of Abu Dhabi. Therefore, it is crucial and obligatory to encourage the presence of skilled workmanship to maintain the quality infrastructure value in the Emirate of Abu Dhabi in particular and the United Arab Emirates in general.

Acknowledgments

The QCC would like to thank the members of the working group listed below:

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Occupational Terms

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No.	Field	Details	
8.	Grading	**Application unit**: *Competent/Not Yet Competent*	
9.	Industry sector	Construction , Energy, Electrical Works (internal wiring) & Maintenance	
10.	Developed by	Government Entities	Abu Dhabi Quality & Conformity Council, , National Qualification Authority, Abu Dhabi Distribution Company, Al Ain Distribution Company
11.	Endorsement date	TBD	
12.	Frequency of review	2 Years	
13.	Version No.	1	
14.	ISCO-08	International Standard Classification Of Occupations It is considering as reference see reference page Minor Group 741 – Electrical Equipment Installers and Repairers Unit Group 7411 – Building and Related Electricians	
15.	Years of Experience	4 Years	

Key terms

Term	Description
Hazard	Any substance, physical effect, or condition with potential to harm people, property or the environment.
Low Voltage	An a.c. voltage below 1000V between phases or below 600V between any phase and earth or, a d.c. voltage below 1500V between conductors, or below 900V between any conductor and earth.
High Voltage	An a.c. voltage greater than Low Voltage and less than 36 KV between phases or 21 KV between any phase and earth
Live Electrical Lines	Cables or wires, which connected to the source of power and the power switch is on.
Permit to Work	System is a formal recorded process used to control work which is identified as potentially hazardous and allows central control and ongoing monitoring of higher risk activities to ensure the activities are authorized, carried out by qualified personnel
Lock out/Tag out	Is defined as the introduction of device to isolate energy sources & placement of tag on isolated device to show that equipment is out of service for repair or maintenance work
Earthing	The conductive mass of Earth, whose electrical potential(Voltage) at any conventionally taken as Zero
Health and Safety Regulations	Implementing, monitoring and reviewing the conditions of a safe and healthy workplace, Good knowledge of health and safety requirements and Applicable health and safety regulations and standards including OSHAD-SF and requirements about good knowledge of emergency preparedness and response requirements
Risk	Risk is the product of the measure of the likelihood of occurrence of an undesired event and the potential adverse consequences which this event may have upon: · People – injury or harm to physical or psychological health · Environment – water, air, soil, animals, plants and social Risk = frequency x consequences
Personal Protective Equipment (PPE)	Any device, appliance or equipment (including clothing or sunscreen affording protection against the weather) designed to be worn or held by an individual for protection against one or more health and safety hazards, or minimize their exposure to workplace risks. It includes, but is not limited to, items such as facemasks and respirators, eye protection, high visibility clothing, coveralls, goggles, helmets, safety harnesses, gloves and footwear.
Building diagram	A technical drawing of a structure or building that is drawn in a scale that is proportionate to its real-world dimensions. Building drawings include site plans, floor plans, elevations and sections. Drawings that provide additional specific/specialist details are known as Coordination Drawings.
Load schedule	Schedule shows the details of the electrical circuit including wire size, protective device rating , connected and diversity load for each circuit .
Cross Section	A section is a type of building drawing. It represents a vertical plane cut through the structure.
Elevation	An elevation is a type of building drawing. It is a drawing of the exterior or interior of a building or structure as seen from a horizontal position - without dimensional perspective.

Floor plan	A floor plan is a building drawing. It is a drawing to scale showing a view from above, of the relationships between rooms, spaces and other physical features at one level of a structure.
Hazard	Any substance, physical effect, or condition with potential to harm people, property or the environment.
Electrical Layout drawing	Is a type of drawing that shows information about power, lighting and communication point's positions in combination with architectural drawings.
Site Plan	A site plan is a type of building drawing that shows a new or existing building's position in relation to the boundaries of the block of land.
Wiring diagram	Is a type of drawing that shows the detail of the connection between the electrical lighting , power and other electrical equipment with its supply.
Isolated	Disconnected from all possible sources of electrical energy by opening of switches, opening or withdrawal of circuit- breakers, removal of fuses, links, connections and the like and rendered incapable of being energized unintentionally. Isolation of refrigerant gas lines.
Cord	A cord to conduct power to an electrical appliance.
Terminate	The connection of a cable or cord to any electrical apparatus.
Work instructions	Written or verbal description of the work to be undertaken by an individual or work team.
Electrical wiring regulations	Rules established by the electrical regulator that govern the design, construction, installation, maintenance and operation of safe and efficient Low Voltage (LV) Electrical Installations in all Premises within the Emirate of Abu Dhabi.
Connected Load	The aggregate load of Appliances and other electrical equipment at a Premise.
Diversified Load	The load at a Distribution Board, at the Electricity Intake or at any other point in an Electrical Installation, calculated using diversity factors.
Connection Point (CP)	the point which defines the boundary between the Owner's Electrical Installation installed at a Premises and the main cable or equipment owned by the Distribution Company.
Distribution Board	an assembly designed for housing isolation switches and Protective Devices and for connecting multiple Circuits, including their associated neutral and Earth Conductors.
Electrical Installation	An Electrical Installation comprises any fixed or temporary cable, switchgear or other electrical equipment or apparatus within a Premises or other place where there is an electricity supply (including outdoor locations). Fixed or portable electrical Appliances are not considered part of the Electrical Installation, although these Regulations do include requirements for the connection of Appliances (e.g. plugs and socket-outlets).
Electrical Installation Certificate	a certificate in the format indicated in these Regulations which is issued by a Licensed Contractor after completion of work on an Electrical Installation and provided to the Customer or Owner of the Premises.
Licensed Contractor	A person, entity or company which has been assessed by the Distribution Company as competent to work on Electrical Installations and issued a Competency Licence by that Distribution Company.
Premises	Any occupied or unoccupied land, structure, building, enclosure or other place. Such locations include, but are not limited to, apartments, villas, offices, shops, warehouses, hotels, commercial complexes, leisure complexes, public buildings, parks, farms, temporary Electrical Installations, entertainment arenas, construction sites, tents, outbuildings, caravans, street lighting and traffic signs.
Accessory	A device, other than current-using equipment, associated with an Electrical Installation.

Appliance	An item of current-using equipment.

Performance Criteria

Element: Assemble and Secure supporting accessories/equipment for electrical installations

Unit	1. Follow work instructions and procedures for electrical wiring installations
PC 1.1	Obtain, clarify and follow work instructions
PC 1.2	Follow procedures for referring non-routine events to Technical Supervisor for directions
PC 1.3	Notify Technical Supervisor of the completion of the work

Unit	2. Assemble and secure supporting accessories / equipment for electrical wiring installations
PC 2.1	Use fixing devices as directed by the Technical supervisor meeting specifications for suitability for the environment, load to be carried and substratum / structure into which they are to be installed
PC 2.2	As directed by the Technical Supervisor use supporting accessories / equipment to support, fix and protect relevant low voltage cabling and functional accessories
PC 2.3	Install fixing devices in line with work instructions and manufacturer's requirements
PC 2.4	Install supporting accessories/equipment in line with work instructions and safety, regulatory and manufacturer's requirements
PC 2.5	Carry out routine quality checks in line with work instructions

Element: Disassemble, assemble and fabricate electrical components

Unit	3. Prepare for working with electrical components
PC 3.1	Obtain, clarify and follow work instructions
PC 3.2	Obtain safety permits for using the tools, equipment and measuring devices directed by your technical supervisor
PC 3.3	Sharpen cutting tools to suit the materials on which they are to be used
PC 3.4	Collect materials required for work task
PC 3.5	Confirm the need to test or measure live with Supervisor

Unit	4. Disassemble, assemble and fabricate electrical components
PC 4.1	Arrange electrical isolation as required in line with safety and regulatory requirements and technical supervisor's instructions
PC 4.2	Dismantle and reassemble components in line with Technical Supervisor's instructions and specifications
PC 4.3	Make components used in low voltage electrical wiring installations using dimensions determined from layout drawings and work instructions
PC 4.4	Minimize waste and damage to the surrounding environment or services when disassembling, assembling and / or fabricating components
PC 4.5	Follow procedures for referring non-routine events to immediate Technical Supervisor for directions
PC 4.6	Carry out routine quality checks in line with technical supervisor’s instructions

Unit	5. Tidy up work area and equipment
PC 5.1	Clean and maintain safety of work site in line with established procedures
PC 5.2	Notify Technical Supervisor of the completion of the work

Element: Terminate cables, cords and accessories for low voltage circuits

Unit	6. Follow instructions and procedures for low voltage circuit work
PC 6.1	Obtain, clarify and follow work instructions
PC 6.2	Follow procedures for referring non-routine events to Technical Supervisor for directions
PC 6.3	Notify Technical Supervisor of the completion of the work

Unit	7. Terminate cables, cords and accessories for low voltage circuits
PC 7.1	Follow directions from Technical Supervisor to check the junction box/terminal enclosures and terminal types and to identify the required type and size of cable and conductor termination devices
PC 7.2	Obtain and check for safety and serviceability all tools, materials and testing devices required for terminating cables and cords and report any damage
PC 7.3	Arrange electrical isolation as required in line with technical supervisors directions and safety and regulatory requirements
PC 7.4	Cut cable/cord ends and strip sheath/insulation with sufficient length to prevent strain on terminations while minimizing waste
PC 7.5	Fit cable glands/retaining devices and secure to ensure cable/cord cannot be pulled out of entry into junction box/ terminal enclosure
PC 7.6	Prepare conductors to suit the type of terminal at which they are to be connected in line with instructions
PC 7.7	Terminate conductors to ensure continuity across the terminal

Unit	8. Carry out checks and maintenance for low voltage circuits
PC 8.1	Confirm the need to test or measure live with technical supervisor
PC 8.2	Test terminated cables and cords
PC 8.3	Carry out routine quality checks in line with work instructions
PC 8.4	Clean and maintain safety of work site in line with established procedures

Element: Recognise and obtain components, accessories and materials for electrical installations

Unit	9. Follow work instructions and procedures
PC 9.1	Obtain, confirm and follow work instructions
PC 9.2	Seek further instructions from Technical Supervisor in the event of unplanned happenings or conditions
PC 9.3	Follow workplace safety procedures
PC 9.4	Notify Supervisor of the completion of the work

Unit	10. Obtain components, accessories and materials for electrical wiring installations
PC 10.1	Recognize components, accessories and materials in line with technical supervisors instructions
PC 10.2	Locate components, accessories and materials specified in work instructions
PC 10.3	Obtain required components, accessories and materials in line with work instructions
PC 10.4	Confirm that components, accessories or materials conform to work instructions

Element: Use diagrams and schedules

Unit	11. Follow work instructions for using diagrams and schedules
PC 11.1	Obtain, clarify and follow work instructions
PC 11.2	Use the Layout plan based on wiring diagrams and Load schedules in line with the Technical Supervisor's instructions
PC 11.3	Identify the dimensions of application work from the building diagrams
PC 11.4	Use information from the diagrams and schedules

Unit	12. Use diagrams and schedules in work
PC 12.1	Use the building diagrams that are appropriate to the work being undertaken as directed by technical supervisor
PC 12.2	Use information from the building diagrams and schedules in the work in line with instructions from the technical Supervisor including: - Diagram layouts - Conventions - Common symbols

PC 12.3	Determine location of equipment from the building diagrams and schedules for application to work undertaken
PC 12.4	Use information from wiring diagrams of common symbols and conventions
PC 12.5	Use information from cable schedules for application to work undertaken

Element: Ensure adherence to health and safety requirements and good knowledge of emergency preparedness, response requirements and Knowledge about OSH regulations including Abu Dhabi OSH System Framework

Unit	13. Meet health and safety requirements of electrical installations and response requirements
PC 13.1	Obtain and check for safety and serviceability all tools and equipment needed for installing fixing devices and supporting accessories / equipment and reports any damage
PC 13.2	As directed by the Supervisor arrange electrical isolation where work is within arm's reach of exposed conductive parts, plant or machinery in line with safety and regulatory requirements
PC 13.3	Minimize waste and damage to the surrounding environment or services when carrying out work tasks
PC 13.4	Clean and maintain safety of work site in line with established procedures
PC 13.5	Follow occupational health and safety [OHS] procedures including use of PPE and safe use of hand and power tools
PC 13.6	Knowledge about OSH regulations including Abu Dhabi OSH System Framework and include as a minimum OSHAD-SF Cop (15.0)(21.0)(24.0)

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